

THE REJECTION

Claims 5 through 19 are objected to pursuant to 37 CFR 1.75(c) as being in improper form.

Claims 1 through 4 are rejected pursuant to 35 U.S.C. §102(b) as being anticipated Kuckens.

Claims 1 through 4 are rejected under 35 U.S.C. §102(b) as being anticipated by Tuominen.

DISCUSSION

The Examiner has objected to Claims 5 through 19 as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. This does not explain the Examiner's failure to examine independent Claims 10 and 17 and the claims depending there from. Applicant has amended the claims to correct the multiple dependent status and respectfully submits that all claims are in condition for examination, including independent Claims 10 and 17 and the claims dependent there from which should not have been withdrawn from consideration in the first Office Action.

Applicant has submitted a marked up Abstract conforming to the requirements of the Abstract having less than 150 words.

Applicant has amended Claim 1 and Applicant has added new independent Claim 20. Applicant respectfully submits that amended Claim 1 and new independent Claim 20 do not introduce any new subject matter. Support for the additional language of amended independent Claim 1 may be found from the specification as follows: "Attracting or repelling magnetic force", see page 7, lines 6-7 and pages 8, lines 10-11 and 17-18. "Bellows acting with a spring force against the actuator", see page 4, lines 3 and 20-23, and page 8, lines 18-20. "Current coil in cooperation with current adjusting means", see page 7, lines 4-11, and Figures 1 and 3. "The actuator working against the

spring action of the bellows", see page 4, lines 4 and 20-23.

Regarding new Claim 20, mention of the magnet and current coil being without contact with the magnet finds support from page 7, lines 1-4 of the specification.

Applicant's invention relates to the precision dosage of small amounts of liquid by means of a flexible bellows, which can make repeatable movements without friction in the bellows or in the actuating means. The invention provides an actuator comprising two magnetically cooperating parts, one of them being attached to a stationary body of the dosing device and the second being connected to the flexible bellows, the parts being in an attracting or repelling magnetic relationship with each other while acting with their magnetic driving or pulling force against the spring force of the bellows. The novel contribution of the invention is the use of a current coil controlled with current adjusting means, enabling precise control of the magnetic force and the length of the bellows movements providing the required dose of liquid. The substantially continuous control of the magnitude of the current allows free selection of the length of the bellows movement and thereby dose volumes within the available range of movement of the bellows. The avoidance of mechanic friction within the device guarantees exact repeatability of the movements and accuracy of the volumes of liquid produced.

The Applicant respectfully submits that the two prior art references relied upon by the Examiner do not correspond to the invention and that there is no anticipation of the claims as amended.

In W.L. Gore and Associates v. Garlick, Inc., 469 US 851(1984), the Federal Circuit states that "Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. It is not enough however that the prior art reference disclosed all of the claimed elements in isolation. Rather as stated by the Federal Circuit, "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. Lindemann Maschinenfabrik GmbH v. American Hoist and Dairy Co., 221 USPQ 481 (Fed Cir. 1984). Further, under 35 U.S.C. §102 anticipation requires that the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public. Further, the Federal Circuit has added that anticipation determination is viewed from one of ordinary skill in the art. Scripps Clinic and Research Foundation v. Genentech, Inc., USPQ 2nd 1001 Fed. Cir. 1991. Still further the court has held that with respect to inherency, it may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is insufficient. The missing element or function must necessarily result from the prior art references. In re

Oelrich 212 USPQ 323 (CCPA 1981).

By examining the various elements of these decisions, a prima facie case of anticipation is established when the Examiner provides 1) a single reference; 2) that teaches or enables; 3) each of the claimed elements arranged as in the claim; 4) expressly or inherently; and 5) as interpreted by one of ordinary skill in the art. The absence of one of these elements defeats the prima facie case of anticipation.

U.S. Patent 4,393,982 to Kuckens describes a liquid dispenser with a bellows and a magnetic actuator, but the quantities or doses of liquid dispensed are merely provided by switching the current on or off (see column 3, lines 63-68). There are spacer members predetermining the length of the stroke of the actuating means and thereby the size of the dose. This results in doses of equal size and if a person skilled in the art would contemplate changing the size of the dose, he or she would change the location of the spacer members, if such a mechanical rearrangement were permitted by the structure of the device. The technique is entirely unsuitable for precision dosing of small volumes or instantaneous changes of dose volumes as allowed and taught and disclosed by the present invention. Still further, according the Kuckens reference, the parts of the actuator are also not separate as required by Applicant's new Claim 20, but rather, at the opposite ends of the bellows and thus connected with each other through the bellows.

U.S. Patent 5,638,986 to Tuominen and relied upon by the Examiner as an anticipatory reference corresponds to FI Patent 94675 discussed as prior art in Applicant's present application. The Examiner has singled out Figure 14 of the reference showing dosing equipment comprising a bellows propelled by a rigidly installed servo motor. The motor rotates a ball screw to propel a nut together with the end of the bellows attached thereto. This does not correspond to the arrangement according to the present invention in which the actuator has parts magnetically attracting or repelling each other and the net magnetic force is working against the spring action of the bellows. In the Tuominen reference, the position of the end of the bellows is entirely determined by the encoder and the servo motor, the spring force of the bellows having no contribution whatsoever thereto. The Tuominen reference also does not teach, disclose nor suggest selective changes of current passing the actuator to produce different dose volumes as taught by the present invention.

The Examiner's claim that the equipment illustrated in Figure 14 of the Tuominen reference would comprise a flexible centralizer is wholly misplaced. There is no element 9 in Figure 14 and no flexible centralizer described anywhere in the reference. Element 9 as seen in Figures 1 and 6-10 is a shaft rotated by a stepper motor 3. The disadvantages of a stepper motor in comparison with Applicant's present

invention have been discussed extensively on pages 1-3 of the instant application.

Applicant respectfully submits that the Examiner's objection to Claims 5 through 19 as being in improper form and therefore not considered was in itself improper. Applicant respectfully submits that independent Claims 10 and 17 and the claims depending there from are in proper format for consideration and should not have been withdrawn from consideration on the merits in the first Office Action. Applicant has amended independent Claim 1 and shown the basis therefore and has added new independent Claim 20 and has shown the basis therefore. Applicant has amended those claims which are deemed to be in improper form and the Applicant therefore respectfully submits that all claims, Claims 1-21 should be considered on the merits. Applicant further respectfully submits that in light of the amendment to the claims, and the discussion herein, that the application and the claims are in condition for allowance and a notice of same is respectfully solicited.

Respectfully submitted,

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